

**PLASMA MICROJET ARRAYS FOR SELECTIVE OXIDATION OF METHANE TO  
METHANOL**

5

**Abstract of the Disclosure**

An apparatus and method for converting methane to methanol by partial oxidation comprises a source of methane, a source of oxygen, and a capillary tube having an outflow end and an inflow end communicating with the sources of methane and oxygen. An anode is positioned proximate to but spaced from the capillary tube. A voltage source negatively biases the capillary tube relative to the anode. A plasma jet flows from the outflow end of the capillary tube. The methane partially oxidizes into methanol in a reaction zone in the plasma jet. A collector receives the methanol in the plasma jet for subsequent condensation, separation and purification.